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## LENIN PRIZE NOMINATIONS

-USSR-

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USSR

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FOREWORD

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Following are translations of selected articles from various Soviet newspapers, as indicated with each article. /

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## STEEL AND VACUUM

### In Competition for the Lenin Prize

Following is a translation of an article by Candidate of Technical Sciences V. Parfenov, in Pravda, Moscow, 4 April 1961, page 4.

The railroad branch line is pushing ever further northward. The rails are laid even during the coldest weather. Suddenly the operations are halted. A rail recently delivered to the scene of construction has suddenly broken in two with a crackling sound. An alarm telegram is sent to the metallurgical plant: "Rails break prior to laying..."

Scientists established that the brittle breaking of steel begins at the locations of the accumulation of minute pores and fissures formed during the casting process. The liquid metal contains much oxygen, nitrogen, and especially hydrogen. During the hardening of the ingot hydrogen does not have time to escape and accumulates in the internal cavities. The pressure in these cavities increases to the point when near the cavities internal breaks occur which stretch and become longer during the rolling process. It is because of these faults and harmful impurities that even recently rails, steel bridges, and welded ship hulls would suddenly break.

How can hydrogen be removed from the metal? In order to achieve this the large steel castings weighing many tons are kept in the incandescent state for more than a month. What a great amount of fuel is burned during this time in the heating furnaces!

However, it was found that compact and clean castings can be obtained much more rapidly and cheaply. Even before the Second World War two Soviet scientists A. M. Samarin and L. M. Novik built a small steel foundry. In it the ladle with the molten metal prior to the casting was kept for some time in a vacuum, a special chamber from which air had been pumped out. Even a short period of time under vacuum makes steel unrecognizable. It attains greater plasticity and purity. What is happening?

"In the liquid metal," says A. M. Samarin, "the amount of dissolved gases depends on the surrounding pressure. Upon a decrease in pressure the steel, like mineral water in a just opened bottle rapidly discharges the gases. The lower the pressure the more completely is the steel freed from gas."

The Soviet scientists in cooperation with the metallurgists of the plants imeni Dzerzhinskiy and "Dneprospetsstal'" during the recent years developed and introduced an industrial method for improving the quality of steel, namely the vacuum treatment of liquid metal in the

ladles. A gigantic ladle filled with steel which has just been discharged from an ordinary metallurgical furnace is placed into a pit, then a special mechanism covers it with an airtight lid. The operator presses a button. Powerful pumps removing air from under the lid are turned on. In the ladle the steel bubbles violently freeing itself from the gas. The little bubbles also remove foreign materials from the metal. After ten minutes the boiling ceases. The steel is ready for casting.

Just what is achieved by the vacuum treatment?

In the steel metallurgy laboratory of the Institute of Metallurgy of the Academy of Sciences USSR there are several "treated" steel ingots. In shape they resemble gigantic bottles. The core and the upper portion of the ingot obtained under the usual conditions look like a sieve, they are porous. The other ingot of vacuum treated steel is entirely "healthy" throughout. Steel freed from hydrogen and nonmetallic impurities becomes more plastic. It does not crack during rolling, does not turn brittle in the coldest weather.

All branches of technology require pure alloys. Let us take the ball bearing industry, for example. The surface of the balls must be ideally smooth, without the smallest flaws. It is not easy to make a good quality ball from porous metal containing impurities. Bearing parts made of vacuum treated steel last many times longer than those made of the ordinary steel of the same type.

Railroad car axles, ship propeller shafts, gas and steam turbine vanes, engine parts, — all go out of commission through "fatigue". As a result of prolonged vibrations at first a small invisible crack appears at the location of the future fault. It gradually penetrates deeper into the article until it destroys it. Machine parts made of vacuum steel can withstand vibrations for a much longer time.

The metal obtained according to the method of the Soviet scientists and engineers finds increasingly extensive application in power machine building. Generator parts, cores for permanent magnets, and transformers are made of this metal. It has been computed that as a result of using vacuum treated metal in power machine building approximately five billion kilowatt hours of electric energy can be saved annually.

The use of the vacuum will have a decisive effect on the production of steel in converters by removing sulphur from iron rapidly and inexpensively. High grade iron alloys, ferrochromium and ferromanganese are produced by means of the vacuum process.

The treatment of steel and alloys under vacuum has found extensive application today at many plants of our country. A number of plants are to adopt it during the current year. However, the beginning of the operations is sometimes delayed. For example, at the Chelyabinsk Metallurgical Plant the installation was built two years ago but is not yet operating because of a delay in the delivery of vacuum equipment. The Scientific Research Institute of Chemical Machine Building (NIIKhimnash) designed a powerful steam ejector vacuum pump as early as 1959. However, the Moscow "Kompressor" plant which was assigned the building of the first model of the pump has not yet accomplished the task.

During the years of the seven year plan this advanced method of

improving the quality of steel and alloys will be introduced everywhere. In the immediate future millions of tons of steel will be produced by means of the vacuum method. The vacuum process is a new step in the development of our metallurgy. This work recommended for competition for the Lenin Prize fully deserves the high award.

## FOUNDER OF THE SCIENCE ON SEMICONDUCTORS

Following is a translation of an article by Academician B. Konstantinov in Izvestiya, Moscow, 21 March 1961, page 4.

In the competition for the Lenin Prize of 1961 in the Field of Science the Physics Section of the Lenin Prize Committee has recommended "The Theoretical and Experimental Investigations on the Physics of Semiconductors" by the prominent physicist the Academician A. F. Ioffe.

The eminent scientist initiated in this country investigation of the extremely important problems of modern physics, such as the problem of strength of solids, electronics, and nuclear physics. A. F. Ioffe's greatest contribution is in the development of the problem of semiconductors. Investigations on the physics of semiconductors, their utilization in science and the national economy were his favorite occupations especially during the recent ten-fifteen years. The works of A. F. Ioffe on the theory and experimental study of semiconductors are known extensively and have been recognized by the world science as fundamental works of science on the subject.

The efforts of the scientist and his school revealed the nature of the electrical conductivity of semiconductors and established the "hole" and "electron" mechanisms of transportation of electrical charges in this new class of materials.

A. F. Ioffe for the first time clearly posed and solved the problem of obtaining semiconductor materials with prescribed properties for manufacturing electrical thermometers, photoresistances, rectifiers, thermocouples, and other devices.

Theoretical and experimental work on the rectifying action of semiconductors permitted science to establish the part played by the electron-to-hole transition in semiconductors. They served as the basis for development of the technology of solid power rectifiers, and the organization of their industrial production in our country.

A. F. Ioffe's work on photoelectric optical and thermal properties of semiconductor compounds is extensively known. These works yielded many valuable scientific facts. His investigations of the behavior of semiconductors in strong electrical fields explained the reason why at a certain critical value of the electrical field the semiconductors begin to exhibit deviations from the classical Ohm's law.

The Academician spent much energy and strength in the study of thermoelectric properties of semiconductors. In the early 'thirties, he had already foretold that semiconductor thermocouples will play an important part in power engineering of the future. Today these wise words are beginning to be justified.

On the basis of truly enormous experimental data, A. F. Ioffe and his assistants succeeded in creating an orderly theory of thermoelectric means of transformation of energy. It is given by the Academician in the following monograph: "Electric Power Principles of Thermoelectrical Batteries Made of Semiconductors." His latest book Poluprovodnikovyye Termoelementy (Semiconductor Thermocouples) translated into many languages is popularly called in the West "The Bible of Thermoelectricity."

Ioffe's theory which has been thoroughly reasoned out and is based on a large number of experiments and investigations, equipped physicists and engineers engaged in developing new types of thermoelectrical devices with a clear outlook and provided them with a solid basis for calculations used in designing these devices. Tens of various types of cooling devices and thermoelectric generators have been built of semiconductors on the basis of this theory. The Soviet Union became the birthplace of thermoelectric apparatus building.

The prominent scientific achievements of the Academician Ioffe in the region of the physics of semiconductors are now being embodied in various devices made of semiconductors which are confidently entering the sphere of science, technology, and the national economy.

## BATTLE WITH THE SILK-WORM

Following is a translation of an article by a candidate of biology, senior scientific correspondent of the Institute of Geography of Siberia and the Far East, K. Kozlov in Izvestiya, Moscow, 21 March 1961, page 4.

...Traveling along the railroad between Irkutsk and Slyudyanka or flying in an airplane along the western shore of the Baykal, one can see fallow-brown islands against the general background of the green ocean of the tayga. These are vertitable cemeteries of cedar and larch extending over many hundreds of hectares.

Who is guilty of the destruction of the extremely valuable kinds of timber? It is the caterpillar of the Siberian silk-worm moth.

Several thousand caterpillars are massed on each trunk in the afflicted area. They rapidly strip the trees. Their armies advance over a broad front measuring many kilometers, leaving behind them a region of decay and desolation. This area has no food or shelter for birds and beasts any more. In place of the pink azalea and red berries only stunted grass disfigures by bald spots can be seen. A hundred years will pass before the forest will be restored on this cemetery.

This is the reason why the Siberian silk-worm has been studied for many decades. We must mention that the attempts at chemical dusting from the air in the fight against this pest were not successful.

Basing himself on the ideas of the great Russian scientist I. I. Mechnikov concerning the destruction of harmful insects by spreading epidemics among them, the Irkutsk microbiologist Ye. V. Talalayev developed a bacteriological method for fighting the Siberian silk-worm.

In 1949 he succeeded in separating from the corpse of a sick silk-worm moth caterpillar a bacteria which causes a deadly illness, the pyemia. Caterpillars infected by it died within two-four days.

The silk-worm bacillus is a new species of bacteria discovered by the Irkutsk scientist. When no sufficient food or water is available it forms spores, resistant to low temperatures, dehydration, or action of the sun's rays. The spores retain the capacity to germinate and to infect the caterpillars of the Siberian silk-worm. The infection is absorbed with food and afflicts caterpillars of all ages. The dead caterpillar discharges a tar-like liquid filled with cells of the silk-worm bacillus and is extremely infectious to healthy caterpillars. Meanwhile this bacillus is perfectly innocuous to man and warm blooded domestic animals.

Ye. V. Talalayev has achieved much in the study of the methods

of infecting the caterpillars of the Siberian silk-worm moth and of spreading the disease. He emphasizes the importance of distinguishing between the primary and the secondary infection of the caterpillars. The primary infection is achieved by spraying the preparation named dendrobacillin proposed by Ye. V. Talalayev and made by the First Moscow Bacterial Preparations Plant.

The secondary infection, according to Ye. V. Talalayev is the infection of healthy caterpillars by the sick ones. The purpose of the primary infection is the creation of the greatest possible number of foci of microinfection. The secondary infection results in a mass epidemic among the caterpillars and gradually the forest is cleared of the silk-worms. The best time for the primary infection of the caterpillars was also established. It is best to inflict it at such a time that the disease would appear during the pupation of the caterpillars, that is, in early summer.

In the years 1959-1960 the Irkutsk sovmarkhоз (Council of National Economy) tested the bacteriological method of the fight against the Siberian silk-worm proposed by Ye. V. Talalayev on an area of 280 hectares.

It was found that the dry preparation, the dendrobacillin penetrates very well the crowns of trees infested with the silk-worm. The test showed that the infected caterpillar carriers of the bacillus moving away from the focus of infection spread the disease for 350-400 meters around it. Mortality among the caterpillars determined at the pupation stage attains 80-90% on the average, which is quite sufficient for a secondary infection in the ensuing years.

Bacteriological dusting of timber infested with the silk-worm can be done from an airplane.

We must emphasize that the method developed by Ye. V. Talalayev permits the application of other bacterial preparations and not of the dendrobacillin only.

The conference held in December of 1960 in Novosibirsk on the subject of the biological method of fighting insect pests recorded that the bacteriological method of the fight against the Siberian silk-worm developed by Ye. V. Talalayev is recommended for the industrial-production testing over the entire territory of Siberia. It was proposed that the Irkutsk sovmarkhоз begin in 1961 the bacteriological fight against the Siberian silk-worm within the boundaries of the Irkutskaya Oblast' over an area of 50,000 hectares.

The new method is a great victory for our science.

This is the reason why the Irkutsk State University imeni A. A. Zhdanova and the faculty organizations of a number of scientific establishments have recommended the investigation of the Siberian scientist for the competition for the Lenin Prize.

## DISCOVERY BY AN IRKUTSK SCIENTIST

Following is a translation of an article by A. Merkulov of Irkutsk, in Pravda, Moscow, 15 March 1961, page 6.

The Siberian silk-worm causes enormous harm to forestry. The Irkutsk scientist Ye. V. Talalayev developed an effective method for the fight against this forest pest. The method proffered by him has been entered in the competition for the Lenin Prize of 1961.

Numerous letters are received by the Head of the Department of Physiology and Microbiology of the Irkutsk State University, Yevgeniy Vasil'yevich Talalayev. People who do and those who do not know him write to him. Below is one of the letters:

"I, the forester of the Skovorodinskiy forest district of the Amur'skiy Timber Industry Office, Yu. F. Aref'yev, request that you help me in the study and practical application of the method of bacteriological protection of the forest from attacks of the Siberian silk-worm and possibly (even if only in the long-range plans) from other pests. The earnestness of the pleas is explained by the extremely extensive distribution of the Siberian silk-worm in my forest district, especially along the Amur river."

If one could take in at a single glance the entire tayga from the Urals to the shores of the Pacific Ocean, the green of the conifer forest would not gladden the eye over the entire area. Dry and time-blackened trunks of pine, larch, and cedar stand over extensive areas. These are the results of the raids of the Siberian silk-worm. Many thousands of hectares of timber are destroyed by this unbelievably voracious caterpillar. It is no longer and no thicker than the index finger of a grown man. However, when there are billions of such caterpillars they become more terrible than a forest fire.

The billion-strong army of silk-worms advances against the forest on an 8-10 kilometer front not to be stopped by any obstacles. They easily overcome mountain summits and broad rivers.

When the caterpillar army is "at work" to an inexperienced person it seems that he hears the sound of rain in the woods. However, after such a "rain" all that is left of a living forest is dead trees gnawed clean.

For many years forestry workers in fighting the silk-worm dusted the areas infested with it by chemical poisons from airplanes. However, such a method is both expensive and ineffective. It can be used with success only when the forests are not large. What is to be done with millions of square miles of tayga?

Now the Irkutsk scientist Ye. V. Talalayev joined in the fight against the Siberian silk-worm.

In the spring of 1949, 72 kilometers from Irkutsk in the foothills of the Sayan Mountains near the Bol'shaya Glubokaya village, a mass epidemic of the silk-worm began. Here the scientist started his experiments. At first he and his assistants collected dead caterpillars and analyzed the causes of their death. Talalayev discovered ten different bacterial diseases in the caterpillars and then began to find out which of them is the most potent. This proved to be a disease caused by a spore-type bacillus hitherto unknown in microbiology. It caused pyemia in the caterpillars from which they died within two to three days.

However, although finding the carrier of death to the Siberian silk-worm is quite an achievement a skillful use of it without harming plants, animals, and people, is another task again. The principal task was finding the conditions under which the preparation could cause mass epidemic and death among the insects.

This is the main factor in the work of the scientist, since until now no one had ever used this method in the fight against the pest. This new discovery has revealed new possibilities to bacteriology in the battle against insect pests. The search, experimentation and testing continued. None of the animals were affected by the preparation. What about man? The scientist tested its action on himself. The experiment was successful. The preparation proved to be entirely safe.

In the years 1954 and 1955 Talalayev conducted a series of experiments on the fight against the Siberian silk-worm. They verified his hopes.

The experiments showed that the Siberian silk-worm must be infected while it is in the caterpillar stage. Now Talalayev has completely developed his method of the fight against the Siberian silk-worm. It is extremely simple. Certain areas of the forest infested by the caterpillars are dusted with the preparation and the caterpillars do the rest. In moving about they create a chain reaction of infection. The corpses of the dead caterpillars hang in cocoons on the trees for several years, and being filled with spores they remain as foci of infection all this time. Rain serves the purpose well. Washing through the cocoons it spreads the infection on the caterpillar population located on the lower branches of the tree.

Today the bacteriological method of the fight against the Siberian silk-worm has been tested on a large scale. Scientific foresight is verified by extensive practical application. During the current year the Irkutsk Sovmarkhоз has planned to make 300 tons of Talalayev's preparation. This will be sufficient for savings 300,000 hectares of larch plantings infested with the silk-worm.

ANNOUNCEMENT OF THE COMMITTEE ON LENIN PRIZES IN THE FIELDS BY  
SCIENCE AND TECHNOLOGY UNDER THE COUNCIL OF MINISTERS, USSR.

Following is the translation of an unsigned article in  
Pravda, Moscow, 17 February 1961, page 3.

The Committee on Lenin Prizes in the Field of Science and Technology announces that the following papers have been admitted to the competition for the Lenin Prizes of 1961.

In the Field of Science

1. Venkov B. A., Tsikl rabot po geometrii chisel /Series of Works on the Geometry of Numbers./

Recommended by the Leningrad Mathematical Society.

2. Ioffe A. F., Teoreticheskiye i eksperimental'nyye issledovaniya po fizike poluprovodnikov /Theoretical and Experimental Investigations on the Physics of Semiconductors./

Recommended by the Physics Department of the Committee on Lenin Prizes in the Field of Science and Technology Under the Council of Ministers USSR.

3. Landau L. D., Livshits Ye. M., Kurs teoreticheskoy fiziki (mekhanika, teoriya polya) /Course in Theoretical Physics (Mechanics, Field Theory)/

Recommended by the Institute of Problems in Physics im. A. A. Vavilov, Academy of Sciences USSR.

4. Postnikov M. M., Tsikl rabot po gomotomicheskoy teorii nepreryvnykh otobrazheniy /Series of Works on the Homotopic Theory of Continuous Transformations./

Recommended by the Institute of Mathematics im. V. A. Steklov, Academy of Sciences USSR.

5. Chernyy, G. G., Tsikl rabot po aerodinamike techeniy s sil'nymi udarnymi volnami /Series of Works on the Aerodynamics of Air Flows With Strong Shock Waves./

Recommended by the Department of Mechanics and Mathematics, Moscow State University im. M. V. Lomonosov.

6. Mavlyanov G. A., Geneticheskiye tipy lessov i lessovidnykh porod tsentral'noy i yuzhnay chastej Sredney Azii /Genetic Types of Loesses and Loess-like Rock of the Central and Southern Regions of Central Asia./

Recommended by the Institute of Hydrogeology and Engineering Geology of the Academy of Sciences, Uzbek SSR.

7. Nikolayev N. I., Shul'ts S. S., Karta Noveyshey tektoniki SSSR M 1:5,000,000 /Map of the Most Recent Tectonics of the USSR.

1:5,000,000 Scale. /

Recommended by the Moscow Geological Reconnaissance Institute im. S. Ordzhonikidze and the Aerial Methods Laboratory, Academy of Sciences USSR.

8. Strakhov N. M., Osnovy teorii litogeneza /Principles of the Theory of Lithogenesis/ volumes I and II.

Recommended by the Section of Geology and Geography of the Committee on Lenin Prize in the Field of Science and Technology Under the Council of Ministers USSR.

9. Ivanov A. V., Fauna SSSR. Pogonofory /The Fauna of the USSR. The Pogonophora./

Recommended by the Leningrad State University im. A. A. Zhdanov.

10. Larin I. V., Razrabotka teoreticheskikh osnov i prakticheskikh priyemov uluchsheniya i ratsional'nogo ispol'zovaniya senokosov i pastbishch SSSR /Development of the Theoretical Principles and Practical Methods for Improvement and Efficient Utilization of Hayfields and Pastures in the USSR./

Recommended by the All-Union Academy of Agriculture im. V. I. Lenin.

11. Peyve, Ya. V., Vlasuk P. A., Vinogradov A. P., Kedrov Zikhman O. K., Katalymov M. V., Shkol'nik M. Ya., Koval'skiy V. V., Berzin' Ya. M., Biologicheskaya rol' mikroelementov i primeneniye ikh v sel'skom khozyaystve /The Biological Role of Trace Elements and Their Application in Agriculture/

Recommended by the Bureau of the Biology Division, Academy of Sciences USSR.

12. Petinov N. S., Fiziologiya oroshayemoy pshenitsy /Physiology of Irrigated Wheat./

Recommended by the Institute of Plant Physiology im. K. A. Temiryazev of the Academy of Sciences USSR

13. Talalayev Ye. V., Bakteriologicheskiy metod bor'by s sibirskim shelkopyryadom /Bacteriological Method of Fighting the Siberian Silk-Worm./

Recommended by the Irkutsk State University imeni A. A. Zhdanov.

14. Shaposhnikov V. N., Fiziologiya obmena veshchestv mikroorganizmov v svyazi s evolyutsiyey funktsiy /Physiology of the Metabolism of Microorganisms in Relation to the Evolution of the Functions./

Recommended by the Institute of Microbiology of the Academy of Sciences USSR and the Biological-Soil Division of the Moscow State University imeni M. V. Lomonosov.

15. Zamarin Ye. A., Gidrotehnicheskiye sooruzheniya, Proektirovaniye gidrotehnicheskikh sooruzheniy, Transportiruyushchaya sposobnost' otkrytykh potokov i dopuskayemyye skorosti techeniya, Sel'sko-khozyaystvennyye gidrotehnicheskiye sooruzheniya /Hydraulic Structures, Designing of Hydraulic Structures, Carrying Capacity of Open Streams and Permissible Rates of Flow, Agricultural Hydraulic Structures./

Recommended by the All-Union Academy of Agriculture im. V. I. Lenin.

16. Popov Ye. P., Razrabotka priblizhennykh metodov issledovaniya

i rascheta nelineynykh avtomaticheskikh sistem /Development of Approximate Methods of Investigation and Calculation of Non-linear Automatic Systems/.

Recommended by the Section of Instrument Building and Means of Automation of the Committee on the Lenin Prizes in the Field of Science and Technology Under the Council of Ministers USSR.

17. Usmanov A. G., Komplekt rabot po primeneniyu metodov podobiya perenosa massy v molekulyarnykh sistemakh /Series of Works on the Use of the Methods of Similarity of Mass Transfer in Molecular Systems/.

Recommended by the Energetics Institute im. G. M. Krzhizhanovskiy, Academy of Sciences USSR.

18. Sharov I. A., Ekspluatatsiya gidromeliorativnykh sistem /Operation of the Hydromeliorative systems/.

Recommended by the All-Union Academy of Agricultural Sciences im. V. I. Lenin.

19. Vinogradov V. V., o yazyke khudozhestvennoy literatury /On the Language of the Artistic Literature/

Recommended by the Section of Philology of the Committee on the Lenin Prize in the Field of Science and Technology Under the Council of Ministers USSR.

20. Volgin V. P., Sozdanije i razrabotka vazhnnoy otrassli marksistko-leninskoy istoricheskoy nauki — istorii domarksovykh sotsialisticheskikh ucheniy, itogi kotoroy otrazhены v knige "Razvitiye obshchestvennoy mysli vo Frantsii v XVIII veke" opublikovannoy v 1958 g. v serii "Predhestvenniki nauchnogo sotsializma" i drugikh rabotskh /Creation and Development of an Important Branch of the Marxist-Leninist Historical Science, the History of Premarxist Socialistic Doctrines, which is summed up in the book "Development of the Social Thought in France in XVIII Century" Published in 1958 in the Series "Predecessors of the Scientific Socialism" and in Other Works/.

Recommended by the Institute of History of the Academy of Sciences USSR.

21. Zhirmunskiy V. M., Nemetskaya dialektologiya /German Dialectology/.

Recommended by the Section of Philology of the Committee on Lenin Prizes in the Field of Science and Technology Under the Council of Ministers USSR.

22. Motylev V. Ye., Finansovyy kapital i yego organizatsionnyye /Finance Capital and its Organizational Forms/.

Recommended by the Moscow Financial Institute.

23. Amosov N. M., Antelava N. V., Bogush L. K., Kolesnikov I. S., Limberg B. E., Struchkov V. I., Uglov F. G., Razrabotka i vnedreniye v shirokuyu praktiku original'nykh metodov khirurgicheskogo lecheniya zabolevaniy legkikh /Development and Introduction Into Extensive Practice of the Original Methods of Surgical Treatment of Pulmonary Diseases/.

Recommended by the Institute of Chest Surgery of the Academy of Sciences USSR.

24. Konovalov N. V., Gapato-tserebral'naya distrofiya /Hepato-cerebral Distrophy/.

Recommended by the Section of Medicine of the Committee on Lenin Prizes in the Field of Science and Technology Under the Council of Ministers USSR.

In the Field of Technology

1. Kuz'min A. D., Zhukovich-Stosha Ye. A., Krylov N. I., Kulik B. F., Anfimov M. I., Khimich G. L., Istomin A. V., Sinev Ye. I., Ryzhenko N. A., Tishchenko N. A., Sozdaniye tipovogo nepreryvnogo zagotovochnogo stana 850/700/500 i povysheniye proizvoditel'nosti sushchestvuyushchikh zagotovochnykh stanov /Designing a Standard Continuous Action 850/700/500 Billet Mill and Improvement of Efficiency of the Existing Billet Mills/.

Recommended by the All-Union Institute of Scientific Research, Planning and Designing of Metallurgical Machine Building.

2. Gordov A. N., Kandyba V. V., Kirenkov I. I., Finkel'stein V. Ye., Kovalevskiy V. A., Kompleks metrologicheskikh rabot po sozdaniyu i vnedreniyu metodov i apparatury dlya tochnogo izmereniya vysokikh temperatur /Series of Metrological Works on the Development and Introduction of Methods and Equipment for Accurate Measurement of Elevated Temperatures/.

Recommended by the All-Union Scientific Research Institute of Metrology im. D. I. Mendeleyev.

3. Neklyudov G. I., Tarasov S. V., Chekunin K. I., Avtomatisatsiya i mekhanizatsiya proizvodstva chasov /Automation and Mechanization of the Watch Industry/.

Recommended by the Sovnarkhoz of the Moscow (city) Economic Administrative Region.

4. Afanas'yev S. G., Filipov S. N., Shumov M. M., Beda N. I., Kulagin G. F., Kukuruznyak I. S. Aksenov V. F., Razrabotka i vnedreniye technologii vyplavki stali iz martenovskogo chuguna produvkoj kislorodom sverkhu /Development and Introduction of the Technology of Smelting of Steel from Pig for Open-Hearth Process by Blowing Oxygen From Above/.

Recommended by the Central Scientific Research Institute of Ferrous Metallurgy im. I. P. Bardin, by the Sovnarkhoz of the Tula and Dnepropetrovsk Economic Administrative Regions.

5. Zamotayev S. P., Filippov S. M., Broyde M. Ya., Bogorodskiy A. L., Mikul'chik A. V., Zameshayev V. S., Novitskiy V. K., Vakuumnaya otlivka krupnykh slitkov na Uralmashzavode /Vacuum Casting of Large Ingots at the Uralmashzavod (Ural Machine Building Plant)/.

Recommended by the Sovnarkhoz of the Sverdlovsk Economic Administrative Region.

6. Peysakhzon I. B., Kulakov N. K., Tsarev M. N., Shevchenko A. I., Shelkov A. K., Gaynanov S. A., Koksovyye pechi bol'shoy yemkosti /Large-Capacity Coke Ovens/.

Recommended by the Sovnarkhoz of the Stalino Economic Administrative Region.

7. Samarin A. M., Novik I. M., Tsukanov G. E., Goncharenko N. I., Tregubenko A. F., Garnyk G. A., Rogoza P. D., Ul'yanov D. P., Zheltov A. S., Povysheniye kachestva stali i splavov metodom vakuumnoy obrabotki zhidkogo metalla /Improvement of the Quality of Steel and Alloys by the Method of Vacuum Treatment of the Liquid Metal/.

Recommended by the Institute of Metallurgy im. A. A. Baykov, of the Academy of Sciences USSR.

8. Alikhanov E. N., Bilandarli A. M., Gadzhiev B. I., Kasumzade M. D., Kuliyev I. P., Mamedov M. K., Melik-Tangiyev Z. I., Mzareulov D. K., Negreyev V. F., Salamov M. Yu., Samedov F. I., Khadikov Kh. A., Yashin V. I. Kompleksnoye osvoenije morskikh neftyanykh mestorozhdeniy v Azerbeydzhanskoy SSR /Combined Industrial Exploitation of Submarine Oil Deposits in the Azerbaydzhan SSR/.

Recommended by the "Azneft'" Association of the Sovnarkhoz of the Azerbaydzhan SSR.

9. Budkov V. D., Ziglin L. A., Il'yin A. Ye., Kratenko I. M., Kudinov D. S., Permyakov P. N., Rusakov V. I., Sirotkin V. Ye., Sozdaniye i vnedreniye v proizvodstvo sredstv kompleksnoy mekhanizatsii ochistnykh rabot na shakhtakh Tul'skogo ekonomicheskogo administrativnogo rayona /Development and Introduction into Production of the Means of Complex Mechanization of Stoping Works at the Mines of the Tula Economic Administrative Region/.

Recommended by the Mining Section of the Committee on Lenin Prizes in the Field of Science and Technology Under the Council of Ministers, USSR.

10. Dmitriyev S. I., Zapreyev S. I., Bashev I. F., Milovanov I. B., Kuz'min G. P., Sankin K. F., Parkhonyuk M. G., Shlegrovskiy E. I., Kombinirovannaya sistema razrabotki moshchnykh plastov uglya s primeneniem gibkogo metallicheskogo perekrytiya /Combined System for the Exploitation of Thick Layers of Coal Using a Flexible Metal Roof/.

Recommended by the Kuznets Scientific Research Coal Institute and the Sovnarkhoz of the Kemerovo Economic Administrative Region.

11. Il'yin G. D., Karpenko N. M., Kiyko K. I., Fustil'nikov M. R., Korotkov S. T., Ul'yanov A. V., Kozhemyakin K. F., Otkrytie i vvod v razrabotku krupnykh gazokondensatnykh mestorozhdeniy v Krasnodarskom kraye /Discovery and Putting Into Exploitation of Large Gas Condensate Deposits in the Krasnodarskiy Kray/.

Recommended by the Sovnarkhoz of the Krasnodar Economic Administrative Region.

12. Malkin I. M., Bublis V. N., Dzhakupbayev A. N., Kutuzov D. S., Khalin P. K., Travnikov A. S., Razrabotka, vnedreniye i korennoye usovershenstvovaniye sistemy prinuditel'nogo blokovogo obrusheniya na rudnikakh Leninogorskogo polimetallicheskogo kombinata /Development, Introduction, and Radical Improvement of the System of Forced Block Collapsing in the Mines of the Leninogorsk Polymetallic Kombinat/.

Recommended by the Presidium of the Academy of Sciences of the Kazakhskaya SSR and the Sovnarkhoz of the Eastern-Kazakhstan Economic Administrative Region.

13. Gertsenberg G. R., Razrabotka i vnedreniya avtomaticheskikh regulyatorov vozbuzhdeniya sil'nogo deystviya dlya moshchnykh gidrogeneratorov i sinkhronnykh kompensatorov /Development and Adoption of Automatic Regulators of the Excitation of Strong Action for Powerful Hydraulic Generators and Synchronic Compensators/.

Recommended by the All-Union Electrical Engineering Institute im. V. I. Lenin.

14. Antoshchenko I. M., Deych Ya. M., Kocheshkov V. G., Kuznetsov G. F., Levontin N. B., Makarichev V. V., Monfred Yu. B., Rozanov N. P., Selivanovskiy S. P., Sizov A. A., Sokolov I. L., Strel'nikov N. P., Turko R. L., Razrabotka konstruktsiy krupnopanel'nykh zhilykh zdaniy, tekhnologii ikh izgotovleniya i shirokoye vnedreniye v praktiku stroitel'stva /Development of Designing the Large-Panel Prefabricated Dwellings, Technology of Their Manufacture and Extensive Introduction Into Construction Practices/.

Recommended by the Section of Construction, Architecture, and Transportation Construction of the Committee on Lenin Prizes in the Field of Science and Technology Under the Council of Ministers USSR.

15. Gayduk A. K., Gladkovskiy T. K., Ilyukhin I. M., Komendant G. Ya., Lozovoy Yu. I., Marchenko A. A., Maslennikov V. N., Ratts E. G., Riskind B. Ya., Razrabotka i vnedreniye v proizvodstvo novoy tekhnologii natvazheniya armatury prevaritel'no napryazhennykh zhelezobetonnykh konstruktsiy dlya promyshlennogo i grazhdanskogo stroitel'stva s pomoshch'yu electronagreva /Development and Introduction Into Production of the New Technology of Stretching and Reinforcing Rods of the Pre-stressed Reinforced Concrete Structures for Industrial and Civil Construction by Means of Electric Heating/.

Recommended by the Ural Branch of the Academy of Building and Architecture USSR and the Chelyabmetallurgstroy (Chelyabinsk Metallurgical Construction) Trust.

16. Kuleshov N. N., Sokolov B. P., Khadzhinov M. I., Galeev G. S., Kozubenko V. Ye., Musiyko A. S., Yemel'yanov I. Ye., Razrabotka metodov selektsii i semenovodstva kukuruzy, sozdanije nye vysokourozhazhnykh gibridov i sortov i shirokoye ikh vnedreniye v sel'skohozyaystvennoye proizvodstvo /Development of the Methods for Selection and Seed Production of Corn, Creation of its Highly Productive Hybrids and Types and Extensive Introduction Thereof Into the Agricultural Production/.

Recommended by the All-Union Academy of Agriculture imeni V. I. Lenin and the Khar'kov Agricultural Institute im. V. V. Dokuchayev.

17. Agabal'yants G. G., Brusilovskiy S. A., Merzhanian A. A., Razrabotka i vnedreniye v promyshlennost' biokhemiceskogo i fiziko-khimicheskogo metoda proizvodstva shampanskogo v nepreryvnom potoke s automatizatsiyey tekhnologicheskogo protsessa /Development and Introduction Into Industry of the Biochemical and Physical-Chemical Method of Production of Champagne in a Continous Flow With Automation of the Technological Process/.

Recommended by the Sovnarkhoz of the Moscow (city) Economic Administrative Region.

On publishing the titles of papers admitted to participation in the competition for the Lenin Prize of 1961, the Committee appeals to the Soviet public with a request to communicate its opinion on the contents of these papers and on the members of the authors' collectives.

The groups of names of the co-authors of the papers mentioned in the list are left without alterations (in contrast to the preceding publication) with a view of establishing with greater accuracy the degree of the creative participation of each of the co-authors upon further discussion.

The Committee requests that all responses and remarks on the works admitted to the competition and on the participants thereof be sent before 1 April of this year to the following address: Moscow, 1-51, Neglinnaya Ulitsa, 29/14.

For the convenience in acquainting the public further with the papers mentioned all materials on them as of 25 February of this year will be transferred to the State Public Scientific-Technological Library USSR (Moscow, Kuznetskiy Most, No. 12).

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